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L6: Entry 1 of 1

File: USPT

Feb 5, 1991

US-PAT-NO: 4991023

DOCUMENT-IDENTIFIER: US 4991023 A

TITLE: Microprocessor controlled universal video monitor

DATE-ISSUED: February 5, 1991

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nicols; Gary H.	Auburn	CA	N/A	N/A

ASSIGNEE INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Hewlett-Packard Company	Palo Alto	CA	N/A	N/A	02

APPL-NO: 7/ 355729

DATE FILED: May 22, 1989

INT-CL: [5] H04N 5/68, H04N 5/57

US-CL-ISSUED: 358/242; 340/744, 358/903, 358/168, 358/169

US-CL-CURRENT: 348/554; 345/213

FIELD-OF-SEARCH: 358/242, 358/64, 358/65, 358/903, 358/185, 358/168, 358/169, 358/171, 358/174, 340/720, 340/744

REF-CITED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>3980926</u>	September 1976	Krueger	340/744
<u>4321597</u>	March 1982	Martin	340/744
<u>4507683</u>	March 1985	Griesshaber et al.	358/185
<u>4518986</u>	May 1985	Hinn et al.	358/65
<u>4656604</u>	April 1987	van Loon	358/903
<u>4680599</u>	July 1987	Wertz et al.	340/744
<u>4694350</u>	September 1987	Hinn	358/242
<u>4855813</u>	August 1989	Russell et al.	358/903

ART-UNIT: 242

PRIMARY-EXAMINER: Peng; John K.

ABSTRACT:

A microprocessor controlled video montior is presented. The video monitor is able to automatically adjust the values of its parameters to adjust to operation on a number of different computer systems. The video monitor includes control lines,

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File: USPT

Jun 20, 2000

DOCUMENT-IDENTIFIER: US 6078301 A

TITLE: Computer apparatus for sending video information to an image display apparatus and receiving information from the image display apparatus

DEPR:

In the second embodiment of the present invention, since the control signal is transmitted and received by means of the general-purpose interface, bi-directional communication between the display unit 1d and the computer body 1c can be made. Accordingly, the computer body can recognize whether the display unit 1d has received the control signal exactly or not, how the control state of the display unit 1d at the current time is or whether the display unit 1d is exactly operated or not.

CLPV:

a common bi-directional interface cable for carrying the interleaved video and control signals from the computer body interface to the display unit interface circuit and for carrying the communication signals generated at the display unit from the display unit interface circuit to the computer body interface.

CLPV:

wherein said first, second, and third communication signals are exchanged between said computer body and said display unit through the bi-directional cable.

CLPV:

wherein said communication signal input/output means and said display unit is connected through a bi-directional cable, said first, second and third communication signal are exchanged between said computer body and display unit through the bi-directional cable.

CLPV:

wherein said communication signal input/output means and said display are connected through a bi-directional cable, said first and second communication signals are exchanged between said computer body and display unit through the bi-directional cable.

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L4: Entry 11 of 13

File: USPT

Sep 5, 1995

DOCUMENT-IDENTIFIER: US 5448697 A

TITLE: Method and apparatus for simplified control of a video monitor

ABPL:

A method and apparatus which provides bi-directional communication between a video monitor and a computer system unit. This enables the video monitor to inform the system unit of its capabilities without user involvement and also enables the system unit to directly control or adjust all the functions of the video monitor. In the preferred embodiment, a monitor/mouse interface provides bi-directional communication between the video monitor and the system unit. The monitor/mouse interface connects to the mouse and video connectors or the back of the system unit and in turn connects to the mouse and video monitor. The interface includes separate data paths from the system unit to the mouse and video monitor, respectively. Monitor control software is included in the system unit which can be used to control or adjust the output of the video monitor. When a user desires to adjust the output of the video monitor, the monitor control software directs the monitor/mouse interface to provide a communication path between the system unit and the video monitor, and the system unit relates the control information input from the user to the video monitor, which adjusts its visual output accordingly. Also, at each power-on of the computer system, the monitor/mouse interface selects the data path between the system unit and video monitor to enable the video monitor to provide capability information to the system unit. A second embodiment includes the monitor/mouse interface logic comprised in the video monitor.

BSPR:

The present invention relates to video monitors in computer systems, and more particularly to a method and apparatus of bi-directional communication between a video monitor and a computer system unit to allow simplified system control of video monitor functions and simplified monitoring of the video monitor's capabilities.

DEPR:

The monitor/mouse interface 210 enables bi-directional communication between the video monitor 116 and the remainder of the computer system, i.e. the system unit 114, without any hardware changes to the system unit 114. This enables the system unit 114 to adjust the functions of the video monitor 116. In addition, this enables the video monitor 116 to transmit capability information to the system unit 114 without direct user involvement. In this description, the term "direct user involvement" refers to the user having to manually input capability information into the system unit 114 or load this information using a floppy disk. No direct user involvement is required in the present invention, but rather the capability information is automatically transferred at each power-on of the system unit 114 and monitor 116. Therefore the term "direct user involvement" does not include a user merely turning on the system unit 114, which automatically operates to transfer capability information according to the present invention, but rather the act of simply turning on the system unit 114 is referred to as "indirect user involvement."

DEPR:

Therefore, a bi-directional communication method and apparatus between a video monitor and system unit in a computer system is shown. In one embodiment, a monitor/mouse interface is included to provide the data path switching mechanism. In a second embodiment, the logic comprising the monitor/mouse interface is incorporated into the video monitor. This bi-directional communication can be performed with no hardware modifications to the system unit 114. The bi-directional communication allows the system unit to control all of the

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L4: Entry 8 of 13

File: USPT

Jul 29, 1997

DOCUMENT-IDENTIFIER: US 5652845 A

TITLE: Display apparatus

CLPV:

second control means for reading said second memory means when switching on a power supply of said display unit connected to said computer, for receiving the identification information sent from the said display unit connected to said computer through said second communication means to said computer, for enabling comparison of the received identification information from said display unit connected to said computer with at least one of said plurality of identification information stored in said second memory means and for enabling bi-directional communication with said display unit upon achieving coincidence, and for transmitting through said first and second communication means control signals for controlling said internal circuit of said display unit.

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Search Results - Record(s) 1 through 1 of 1 returned.☐ 1. Document ID: US 5550966 A Relevance Rank: 99

L8: Entry 1 of 1

File: USPT

Aug 27, 1996

US-PAT-NO: 5550966

DOCUMENT-IDENTIFIER: US 5550966 A

TITLE: Automated presentation capture, storage and playback system

DATE-ISSUED: August 27, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Drake; Samuel	San Jose	CA	N/A	N/A
Griefer; Allan D.	San Jose	CA	N/A	N/A
Powers, Jr.; John T.	Morgan Hill	CA	N/A	N/A
Thomas; John G.	Santa Cruz	CA	N/A	N/A

ASSIGNEE INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
International Business Machines Corporation	Armonk	NY	N/A	N/A	02

APPL-NO: 8/ 365339

DATE FILED: December 28, 1994

PARENT-CASE:

This application is a continuation of application Ser. No. 07/874,441, filed Apr. 27, 1992, now abandoned.

INT-CL: [6] G06T 13/00

US-CL-ISSUED: 395/154; 395/152, 395/153

US-CL-CURRENT: 707/104; 345/302

FIELD-OF-SEARCH: 395/152, 395/153, 395/154, 364/419.19

REF-CITED:

U.S. PATENT DOCUMENTS

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L9: Entry 1 of 1

File: USPT

Jan 9, 1996

US-PAT-NO: 5483255

DOCUMENT-IDENTIFIER: US 5483255 A

TITLE: Display controller for liquid crystal panel structure

DATE-ISSUED: January 9, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Numao; Takaji	Nara	N/A	N/A	JPX

ASSIGNEE INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY	TYPE CODE
Sharp Kabushiki Kaisha	Osaka	N/A	N/A	JPX	03

APPL-NO: 7/ 972043

DATE FILED: November 5, 1992

FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	APPL-DATE
JP	3-291699	November 7, 1991
JP	4-238619	September 7, 1992

INT-CL: [6] G09G 3/36

US-CL-ISSUED: 345/98; 345/87

US-CL-CURRENT: 345/98; 345/87

FIELD-OF-SEARCH: 340/784, 340/765, 340/811, 340/805, 340/799, 359/54, 359/55, 358/236, 358/241, 345/98, 345/99, 345/100, 345/103, 345/185, 345/201, 345/200, 348/790, 348/792, 348/793

REF-CITED:

U.S. PATENT DOCUMENTS

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<u>4430648</u>	February 1984	Togashi	340/784
<u>4714921</u>	December 1987	Kanno et al.	340/784
<u>5034735</u>	July 1991	Inoue et al.	340/784
<u>5111195</u>	May 1992	Fukuoka et al.	340/811

FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY
0435701	July 1991	EPX
0492542	July 1992	EPX

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L6: Entry 2 of 13

File: USPT

Apr 11, 2000

DOCUMENT-IDENTIFIER: US 6049316 A

TITLE: PC with multiple video-display refresh-rate configurations using active and default registers

ABPL:

A portable personal computer (PC) can be connected to a variety of different external CRT monitors. Configuration of each CRT monitor is performed by the graphics display driver software so that the user does not have to re-configure the graphics sub-system every time a different CRT monitor is connected. Auto-configuration of Plug-and-Play monitors occurs by reading configuration information from the monitor itself. For Windows 95, the Plug-and-Play drivers are used for auto-configuration, or for older operating systems the video BIOS display-data-channel functions is used. Older "legacy" CRT monitors that do not support Plug-and-Play are still auto-configured. The vertical refresh rate for each resolution is stored in a default register on the graphics controller chip. The vertical refresh rate from default register is copied to an active refresh-rate register when a legacy (non Plug-and-Play) monitor is detected. When a Plug-and-Play monitor is detected, the refresh rate is calculated and written to the active refresh-rate register, without overwriting the default registers. Thus a Plug-and-Play monitor can be connected without losing configuration information for the legacy monitors. A Plug-and-Play flag is also added to the graphics controller chip to disable the video BIOS auto-configuration when Windows 95 is used.

BSPR:

More recently CRT monitors have been constructed using the Plug-and-Play (PnP) standard, which allows the PC to automatically configure the PC for different monitors. FIG. 3 is a diagram of automatic configuration of an external monitor using plug-and-play. High-resolution CRT 26 is a newer monitor capable of supporting plug-and-play, and portable PC 20 also has plug-and-play hardware and software. On system initialization, portable PC sends out a series of clock signals on the 15-pin VGA cable to CRT 26, and CRT 26 responds by transmitting back to portable PC 20 a 128-byte data structure called the extended display identification data (EDID). The EDID contains information about the configurations and refresh rates supported by CRT 26, as defined by the Video Electronics Standards Association (VESA) of San Jose, Calif. in the "Display Data Channel Standard", 1996.

BSPR:

Software in portable PC 20 reads the configuration information in the 128-byte EDID and calculates the minimum and maximum vertical refresh rates 14, 16. From rates 14, 16 and the current resolution desired by the user, and the capabilities of the graphics controller hardware, the active refresh rate can be calculated or selected by the display driver using the appropriate video BIOS function. Thus the correct refresh rate is programmed to be active when both portable PC 20 and CRT 26 have hardware and/or software to support auto-configuration of monitors using plug-and-play.

DEPR:

The inventors have realized that automatic configuration of older CRT monitors can be supported, even when these monitors are not plug-and-play compatible. Default refresh rates for these legacy monitors can be separately stored and programmed as the active refresh rate when the monitor is not plug-and-play compatible. Newer monitors that support auto-configuration by plug-and-play program the active refresh rate using the configuration information from the monitor itself, bypassing the default refresh-rate registers.

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File: USPT

Mar 10, 1998

DOCUMENT-IDENTIFIER: US 5727191 A
TITLE: Monitor adapter

BSPR:

The present invention relates to a monitor adapter. More particularly, the present invention relates to a monitor adapter connected between a personal computer and a video monitor for carrying out a relay to transmit information required for Plug and Play to the personal computer and to transmit an optimal video signal for the video monitor from the personal computer to the video monitor.

BSPR:

Display adapter 92 performs a Plug and Play function for a CRT display apparatus 88. More specifically, display adapter 92 outputs a video signal and a synchronization signal to an output port 94 for enabling display apparatus 88. Display apparatus 88 includes a non-volatile memory 9 and device logic 97, and device logic 97 is connected to adapter logic 96 in display adapter 92 through a serial line 3. Non-volatile memory 9 stores display information, and adapter logic 96 and device logic 97 constitute communication logic 95. Adapter logic 96 applies a command for read data and write data of non-volatile memory 9 to device logic 97 through serial line 3, and device logic 97 responsively accesses non-volatile memory 9 to read display information therefrom, and supplies the display information to adapter logic 96 through serial line 3. Adapter logic 96 supplies RGB data to display apparatus 88 such that display apparatus 88 operates in a mode adapted to itself.

BSPR:

Consequently, according to the present invention, since information related to a video monitor can be output to a computer, even a conventional video monitor can be connected to a computer with a Plug and Play function.

BSPR:

Consequently, according to the present invention, since information related to a video monitor can be output to a computer in either a first mode or a second mode, even a conventional video monitor can be connected to a computer with a Plug and Play function in a manner adapted to DDC.